

217/782-2113

JOINT CONSTRUCTION AND OPERATING PERMIT - REVISED

PERMITTEE

Brown Printing Company, Woodstock Division
Attn: Diane Lee
11595 McConnell Road
Woodstock, Illinois 60098

Application No.: 97080012

I.D. No.: 111095ABU

Applicant's Designation:

Date Received: January 31, 2002

Subject: Heatset Web Offset Lithographic Printing Presses

Date Issued: December 23, 2002

Operating Permit Expiration

Date: December 23, 2003

Location: 11595 McConnell Road, Woodstock

Permit is hereby granted to the above-designated Permittee to CONSTRUCT and OPERATE emission unit(s) and/or air pollution control equipment consisting of up to 8 heatset web offset lithographic printing presses (Presses #1 through #8) controlled by a thermal oxidizer afterburner system, 32 ink jet printing cabinets, and ancillary operations, as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

Findings

- 1a. Brown Printing Company (Brown) was issued a Construction Permit to expand its lithographic printing plant in Woodstock. The expansion ultimately involves construction and operation of up to eight lithographic or "offset" printing presses controlled by an afterburner system, along with associated new bindery equipment, including up to 16 new ink jet printing cabinets, and ancillary operations.
- b. Brown has completed the installation of seven offset printing presses and their afterburner system, along with the new ink jet printing cabinets and ancillary operations.
- 2a. Woodstock is an area that is designated nonattainment for ozone. This project was subject to 35 IAC Part 203, Major Stationary Sources Construction and Modification (MSSCAM), because the potential emissions of volatile organic material (VOM) exceeded 25 tons/year.
- b. Brown must also now comply with applicable requirements of the Emissions Reduction Market System (ERMS), 35 IAC Part 205, for this project, as Brown qualifies as an existing participating source for the ERMS.
3. In conjunction with its application for a Clean Air Act Permit Program (CAAPP) permit, Brown requested revisions to this permit related to the limitations on material usage and VOM emissions established for the presses involved in this project. The revision did not affect the overall permitted emissions of the project. In particular, Brown

requested that separate limitations for usage of ink and other materials used on the offset presses be removed from the permit, which increased its operational flexibility and minimized the need for future revisions to the permit. The revision also shifted the amount of VOM emissions allowed for the two types of printing operations, raising the amount allowed for offset printing slightly and lowering ink jet printing by the same amount.

- 4a. The requested revision does not relax the work practices and control equipment that Brown must use to comply with applicable Board emission standards and meet the Lowest Achievable Emission Rate (LAER) as required by MSSCAM.
- b. The Illinois EPA determined that offset printing is still effectively constrained by a single operating limitation on ink usage and a limit on overall VOM emissions. Under new USEPA guidance, separate limitations for fountain solution and cleaning solutions are no longer required.
5. A copy of the application and the Illinois EPA's review of the application and a draft of this permit were forwarded to a location in the vicinity of the plant, and the public was given notice and opportunity to examine this material, to submit comments, and to request and participate in a public hearing on this matter.

Conditions

1. Standard conditions for issuance of construction and operating permits attached hereto and incorporated herein by reference shall apply to this project, unless superseded by the following special conditions.
- 2a.
 - i. The air pressure in offset press dryers shall be maintained lower than the air pressure in the press room during the operation of the press, to assure effective capture of VOM emissions from the dryer.
 - ii. Each oxidizer controlling offset press dryer exhausts shall achieve a control efficiency for VOM of at least 98 percent destruction and be operated at a combustion temperature of 1500°F unless 99 percent destruction is demonstrated.
- b. Fountain solution for offset printing shall contain no alcohol and shall have a VOM content, by volume, as applied, less than or equal to 2 percent, or less than 5 percent if the temperature of the solution is maintained below 60°F measured at the reservoir or the fountain tray.
- c. Cleaning solution for offset printing as used shall contain no alcohol and shall have a VOM composite partial vapor pressure at 20°C of no more than 5 mmHg (0.09 psia at 68°F) or shall contain no more than 30 percent VOM by weight and have a VOM composite partial vapor pressure of no more than 10 mmHg at 20°C (0.19 psia at 68°F).

- d. i. The ink jet printing cabinets shall only be used for "insert" printing on printed materials, e.g., adding individual names and addresses to material in the bindery department.
- ii. The vapor pressure of the VOM solvent for the ink system for the ink jet printing cabinet shall not exceed 1.37 psia at 68°F (71 mmHg at 20°C).
- iii. The VOM emissions of individual ink jet printing cabinets shall be less than 150 pounds per month, average, for all printing cabinets at the source.
- e. All VOM containing cleaning materials (including used rags associated with printing presses) must be kept, stored, and disposed of in closed containers.

Condition 2 represents the Lowest Achievable Emissions Rate (LAER) for emissions of VOM as applied to this project, including both new and existing equipment, pursuant to 35 IAC 203.301.

- 3. Offset printing shall comply with applicable requirements of 35 IAC 218.407(a), 218.409, and 218.410, including the requirements of this permit.
- 4a. The total annual emissions of VOM from this project including offset printing presses (Press #1 through #8 with emission attributable to natural gas combustion in the press dryers and the afterburner system) and the ink jet printing cabinets (Cabinets 1 through 32) shall not exceed 57.95 tons/year. Compliance with this limit shall be determined from a running total of 12 months of data.
- b. i. A. The VOM content of inks, coatings and cleaning solutions used on the offset presses shall not exceed the following limits, expressed as percent by weight. Compliance with these limits shall be determined in accordance with Condition 6, 10, 11 and 14.

Inks and Coatings	40.0
Automatic Cleaning Solutions (Other than Press 1*)	32.0
Manual Cleaning Solutions (Other than Press 1*)	32.0

* Press 1 is a smaller press that was moved to this source and that is used to produce covers.
- B. The VOM content of fountain solution additives for offset presses shall not exceed 10 percent by weight as purchased.
- C. Note: The Permittee must also comply with the requirements of Condition 2(b) and (c) for fountain and cleaning solutions.
- ii. The usage of ink by the offset presses, in total, shall not exceed 530 tons/month and 4,250 tons/year.

- iii. The afterburner system for the offset presses shall be operated to achieve at least 99 percent destruction efficiency for VOM
- iv. Emissions of VOM from the offset presses, other than emissions of VOM attributable to the combustion of natural gas as addressed below by Condition 4(c), shall not exceed 5.3 tons/month and 41.84 tons/year, in total. These limitations are based on information provided in the application, including maximum material usage and VOM content, and the minimum expected performance of the afterburner system for control of the VOM contained in different materials. Compliance with these limitations shall be determined in accordance with the procedures specified in Condition 18(a).
- c. i. Natural gas shall be the only fuel used in press dryers and the afterburner system.
- ii. Emissions and operation of combustion units (i.e., press dryers and oxidizers) shall not exceed the following limits:

Natural Gas Usage		VOM		Emission NO _x		CO	
(1000 CF/Mo)	(1000 CF/Yr)	(T/Mo)	(T/Yr)	(T/Yr)	(T/Yr)	(T/Mo)	(T/Yr)
67,890	814,680	0.2	2.36	3.39	40.73	0.72	8.55

These limitations are based on information provided in the application, including maximum gas usage and emissions associated with fuel combustion determined using standard emission factors from USEPA's *Compilation of Air Pollutant Emission Factors*, AP-42.

Note: This permit is issued based on this source not being a major source under the federal rules for Prevention of Significant Deterioration (PSD) 40 CFR 52.21. This is because the potential emissions of pollutants from the source do not meet the criterion for a major source under PSD, i.e., the potential to emit 250 tons per year of a pollutant.

- d. Emissions and operation of the ink jet printing cabinets, including both new cabinets and the existing cabinets already at this site (total up to 32 cabinets) shall not exceed the following limitations:

Ink and VOM Solvent		VOM Emissions	
(Ton/Mo)	(Ton/Yr)	(Ton/Mo)	(Ton/Yr)
1.75	13.8	1.75	13.8

These limitations are based on information provided in the application, including the maximum material usage and VOM content, with all VOM emitted into atmosphere.

- e. Compliance with annual limits shall be determined from a running total of 12 months of data.
- 5a. An offset press shall not begin operation until construction, including construction or alteration of the associated afterburner system, is complete, and reasonable measures short of actual operation have been taken to verify proper operation.
- b. The Permittee shall notify the Illinois EPA within 15 days of the initial startup of each new offset press and each new oxidizer. (See also Condition 9.)
- 6a.
 - i. Testing to demonstrate compliance with the VOM content limitations in Condition 2 and 35 IAC 218.407(a) (1) (A) and (a) (4) (A), and to determine the VOM content of fountain solutions, fountain solution additives, cleaning solvents, cleaning solutions, and inks and coatings pursuant to Condition 4 shall be conducted by the Permittee upon request of the Illinois EPA using the applicable test methods and procedures specified in 35 IAC 218.105(a), including Method 24 (rather than Method 24A); or
 - ii. The manufacturer's specifications for VOM content for fountain solution additives, cleaning solvents, and inks and coatings may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in 35 IAC 218.105(a) including Method 24.
- b. Testing to determine the VOM composite partial vapor pressure of cleaning solvents, cleaning solvent concentrates, and as-used cleaning solutions shall be conducted in accordance with the applicable methods and procedures specified in 35 IAC 218.110.
- 7a. The afterburner system shall be in operation with at least one of the oxidizers at all times when the associated offset presses are in operation and emitting VOM, and both oxidizers shall be in operation whenever four or more offset presses are in operation and emitting VOM.
- b.
 - i. An oxidizer's combustion chamber shall be preheated to the required operating temperature prior to beginning the associated printing operations. This temperature shall be maintained as an hourly average during operation.
 - ii. The required operating temperature for the combustion chamber shall be consistent with the average operating temperature during testing demonstrating compliance with Condition 2, that is, if the emissions test is performed at a set point temperature higher than 1500°F in order to demonstrate 98 percent destruction or 99 percent% destruction is shown at a lower set point temperature, that higher or lower set point temperature during testing shall be the minimum set point temperature. (The set point for the temperature controller may be 25°F higher to allow for fluctuations but achieve the hourly average. That is, a recorded temperature of 1525°F during a test will be considered 1500°F.)

- c.
 - i. The Permittee shall install, calibrate, maintain, and operate temperature monitoring device(s) with an accuracy of 3°C or 5°F on the each oxidizer in accordance with 35 IAC 218.105(d) (2) and in accordance with the manufacturer's specifications, pursuant to 35 IAC 218.410(c). Monitoring shall be performed at all times when an oxidizer is operating; and
 - ii. The Permittee shall also install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring device(s), such as a strip chart, recorder or computer, with at least the same accuracy as the temperature monitor.
 - d. Notwithstanding 35 Ill. Adm. Code 218.107, seasonal shutdown of the afterburner system from November 1 through March 31 of the following year is not allowed.
 - e. Operation of offset printing presses with excess emissions during malfunction or breakdown of the afterburner system is not allowed.
- 8. Pursuant to 35 IAC 218.410, the Permittee shall implement the following monitoring practices for offset printing presses or "printing lines":
 - a. Fountain Solution VOM Content:
 - i. For fountain solutions to which VOM is added at the source with automatic feed equipment, determine the VOM content of the as-applied fountain solution based on the setting of the automatic feed equipment, which makes additions of VOM up to a pre-set level. The equipment used to make automatic additions must be installed, calibrated, operated and maintained in accordance with manufacturer's specifications.
 - ii. For a fountain solution to which VOM is not added automatically:
 - A. Maintain records of the VOM content of the fountain solution in accordance with 35 IAC 218.411(c) (2) (C); or
 - B. Take a sample of the as-applied fountain solution from the fountain tray or reservoir, as applicable, each time a fresh batch of fountain solution is prepared or each time VOM is added to an existing batch of fountain solution in the fountain tray or reservoir, and shall determine compliance with the VOM content limitation of the as-applied fountain solution by using one of the following options:

1. With a refractometer or hydrometer with a visual, analog, or digital readout and with an accuracy of 0.5 percent. The refractometer or hydrometer must be calibrated with a standard solution for the type of VOM used in the fountain solution, in accordance with manufacturer's specifications, against measurements performed to determine compliance. The refractometer or hydrometer must be corrected for temperature at least once per 8-hour shift or once per batch of fountain solution prepared or modified, whichever is longer; or
2. With a conductivity meter if it is demonstrated that a refractometer and hydrometer cannot distinguish between compliant and noncompliant fountain solution for the type and amount of VOM in the fountain solution. A source may use a conductivity meter if it demonstrates that both hydrometers and refractometers fail to provide significantly different measurements for standard solutions containing 95 percent, 100 percent and 105 percent of the applicable VOM content limit. The conductivity meter reading for the fountain solution must be referenced to the conductivity of the incoming water. A standard solution shall be used to calibrate the conductivity meter for the type of VOM used in the fountain solution, in accordance with manufacturer's specifications.

b. Cleaning Solution.

- i. The Permittee must keep the vapor pressure of the cleaning solution for such cleaning solutions used on any such line(s) as set forth in 35 IAC 218.411(d) (2) (C).
- ii. The Permittee, if relying on the VOM content of the cleaning solution to comply with the requirements of this permit, must:
 - A. For cleaning solutions that are prepared at the source with equipment that automatically mixes cleaning solvent and water (or other non-VOM):
 1. Install, operate, maintain, and calibrate the automatic feed equipment in accordance with manufacturer's specifications to regulate the volume of each of the cleaning solvent and water (or other non-VOM), as mixed; and

2. Pre-set the automatic feed equipment so that the consumption rates of the cleaning solvent and water (or other non-VOM), as applied, comply with Section 218.407(a) (4) (A) of this Subpart.
 - B. For cleaning solutions that are not prepared at the source with automatic feed equipment, keep records of the usage of cleaning solvent and water (or other non-VOM) as set forth in Section 218.411(d) (2) of this Subpart.
9. Recordkeeping and Notification for Afterburners
 - a. Pursuant to 35 IAC 218.411(b) (1), the Permittee shall upon initial start-up of a new printing line, and upon initial start-up of a new control device, submit a certification to the Illinois EPA that includes the following:
 - i. An identification of each heatset web offset lithographic printing line at the source;
 - ii. A declaration that each heatset web offset lithographic printing line is in compliance with the applicable requirements of 35 IAC 218.407(a);
 - iii. The type of afterburner;
 - iv. The control requirements of 35 IAC 218.407(a) with which the lithographic printing line is complying;
 - v. The results of all tests and calculations necessary to demonstrate compliance with the control requirements of 35 IAC 218.407(a); and
 - vi. A declaration that the monitoring equipment required for the afterburner under 35 IAC 218.407(a) (1) (D), as applicable, has been properly installed and calibrated according to manufacturer's specifications.
 - b. Pursuant to 35 IAC 218.411(b) (2) within 90 days after conducting testing of an oxidizer, the Permittee shall submit a copy of all test results to the Illinois EPA and shall submit a certification to the Illinois EPA that includes the following:
 - i. A declaration that all tests and calculations necessary to demonstrate whether the lithographic printing line(s) is in compliance with 35 IAC 218.407(a) have been properly performed;

- ii. A statement whether the lithographic printing line(s) is or is not in compliance with 35 IAC 218.407(a) and the conditions of this permit as applicable; and
 - iii. The operating parameters of the oxidizer during testing, as monitored in accordance with 35 IAC 218.410(c), as applicable.
 - c. Pursuant to 35 IAC 218.411(b) (3) the Permittee shall collect and record daily the following information for each heatset web offset lithographic printing line:
 - i. Afterburner system monitoring data in accordance with 35 IAC 218.410(c) (Condition 7(c));
 - ii. A log of operating time for the afterburner system monitoring equipment, and the associated printing line;
 - iii. A maintenance log for the afterburner system and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages; and
 - iv. A log detailing checks on the air flow direction or air pressure of the dryers and press room to insure compliance with the requirements of 35 IAC 218.407(a) (1) (B) at least once per 24-hour period while the line is operating.
 - d. Pursuant to 35 IAC 218.411(b) (4), the Permittee shall notify the Illinois EPA in writing of any violation of the requirements of 35 IAC 218.407(a) (1) (C) within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation.
- 10. Recordkeeping and Notification for Fountain Solution
 - a. Pursuant to 35 IAC 218.411(c) (1), the Permittee shall upon initial start-up of a new lithographic printing line, certify to the Illinois EPA that fountain solutions used on each lithographic printing line will be in compliance with the applicable requirement of this permit. Such certification shall include:
 - i. Identification of each lithographic printing line at the source, by type, e.g., heatset web offset, non-heatset web offset, or sheet-fed offset;
 - ii. Identification of each centralized fountain solution reservoir and each lithographic printing line that it serves;
 - iii. The VOM content limitation with which each fountain solution will comply;

- iv. Initial documentation that each type of fountain solution will comply with the applicable VOM content limitation, including copies of manufacturer's specifications, test results, if any, formulation data and calculations;
 - v. Identification of the method that will be used to demonstrate continuing compliance with the applicable limitation, e.g., a refractometer, hydrometer, conductivity meter, or recordkeeping procedures with detailed description of the compliance methodology; and
 - vi. A sample of the records that will be kept pursuant to 35 IAC 218.411(c) (2).
- b. Pursuant to 35 IAC 218.411(c) (2) the Permittee shall collect and record the following information for each fountain solution:
- i. The name and identification of each batch of fountain solution prepared for use on one or more lithographic printing line(s), the lithographic printing line(s) or centralized reservoir using such batch of fountain solution, and the applicable VOM content limitation for the batch;
- c. If the Permittee uses a hydrometer, refractometer, or conductivity meter, pursuant to 35 IAC 218.410(b) (1) (B), to demonstrate compliance with the applicable VOM content limit, the Permittee shall maintain records of the following items:
- i. The date and time of preparation, and each subsequent modification, of the batch;
 - ii. The results of each measurement taken in accordance with 35 IAC 218.410(b);
 - iii. Documentation of the periodic calibration of the meter in accordance with the manufacturer's specifications, including date and time of calibration, personnel conducting, identity of standard solution, and resultant reading;
 - iv. Documentation of the periodic temperature adjustment of the meter, including date and time of adjustment, personnel conducting and results;
 - v. If the VOM content of the fountain solution is determined pursuant to 35 IAC 218.410(b) (1) (A), for each batch of as-applied fountain solution:
 - A. Date and time of preparation and each subsequent modification of the batch; and

- B. Volume and VOM content of each component used in, or subsequently added to, the fountain solution batch.
 - vi. Calculated VOM content of the as-applied fountain solution; and
 - d. If the Permittee relies on the temperature of the fountain solution to comply with the requirements of this permit, the Permittee shall maintain records of the following items:
 - i. The temperature of the fountain solution at each printing line, as monitored in accordance with 35 IAC 218.410(a); and
 - ii. A maintenance log for the temperature monitoring devices and automatic, continuous temperature recorders detailing all routine and non-routine maintenance performed, including dates and duration of any outages.
 - e. Pursuant to 35 IAC 218.411(c)(3), the Permittee shall notify the Illinois EPA in writing of any violation of 35 IAC 218.407(a)(1)(A) within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation; and
 - f. Pursuant to 35 IAC 218.411(c)(4), the Permittee shall if changing its method of demonstrating compliance with the applicable VOM content limitations in 35 IAC 218.407, or changing the method of demonstrating compliance with the VOM content limitations for fountain solutions pursuant to 35 IAC 218.409 of this Subpart, certify compliance for such new method(s) in accordance with condition within 30 days after making such change, and perform all tests and calculations necessary to demonstrate that such printing line(s) will be in compliance with the applicable requirements of 35 IAC 218.407.
11. Recordkeeping and Notification for Cleaning Operations
- a. Pursuant to 35 IAC 218.411(d)(1), the Permittee shall upon initial start-up of a new lithographic printing line, certify to the Illinois EPA that all cleaning solutions, and the handling of cleaning materials, will be in compliance with the requirements of 35 IAC 218.407(a)(4)(A) or (a)(4)(B) and (a)(5):
 - i. Identification of each VOM-containing cleaning solution used on each lithographic printing line;
 - ii. The limitation with which each VOM-containing cleaning solution will comply, i.e., the VOM content or vapor pressure;

- iii. Initial documentation that each VOM-containing cleaning solution will comply with the applicable limitation, including copies of manufacturer's specifications, test results, if any, formulation data and calculations;
 - iv. Identification of the method that will be used to demonstrate continuing compliance with the applicable limitations;
 - v. A sample of the records that will be kept pursuant to 35 IAC 218.411(d) (2); and
 - vi. A description of the practices that assure that VOM-containing cleaning materials are kept in closed containers.
- b. Pursuant to 35 IAC 218.411(d) (2), the Permittee shall collect and record the following information for each cleaning solution used on each lithographic printing line:
- i. For each batch of cleaning solution to demonstrate compliance with 35 IAC 218.407(a) (4) (B):
 - A. The name and identification of each cleaning solution;
 - B. Date and time of preparation, and each subsequent modification, of the batch;
 - C. The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent, as determined in accordance with 35 IAC 218.409(e);
 - D. The total amount of each cleaning solvent used to prepare the as-used cleaning solution; and
 - E. The VOM composite partial vapor pressure of each as-used cleaning solution, as determined in accordance with 35 IAC 218.409(e).
 - ii. For each cleaning solution for which the Permittee relies on the VOM content to demonstrate compliance with 35 IAC 218.407(a) (4) (A), and which is prepared at the source with automatic equipment, the Permittee shall maintain records of the following items:
 - A. The name and identification of each cleaning solution;

- B. The VOM content of each cleaning solvent in the cleaning solution, as determined in accordance with 35 IAC 218.409(c);
 - C. Each change to the setting of the automatic equipment, with date, time, description of changes in the cleaning solution constituents (e.g., cleaning solvents), and a description of changes to the proportion of cleaning solvent and water (or other non-VOM);
 - D. The proportion of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution;
 - E. The VOM content of the as-used cleaning solution, with supporting calculations; and
 - F. A calibration log for the automatic equipment, detailing periodic checks.
- iii. For each batch of cleaning solution for which the Permittee relies on the VOM content to demonstrate compliance with 35 IAC 218.407(a) (4) (A), and which is not prepared at the source with automatic equipment, the Permittee shall maintain records of the following items:
- A. The name and identification of each cleaning solution;
 - B. Date and time of preparation, and each subsequent modification, of the batch;
 - C. The VOM content of each cleaning solvent in the cleaning solution, as determined in accordance with 35 IAC 218.409(c);
 - D. The total amount of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution; and
 - E. The VOM content of the as-used cleaning solution, with supporting calculations.
- iv. The date, time and duration of scheduled inspections performed to confirm the proper use of closed containers to control VOM emissions, and any instances of improper use of closed containers, with descriptions of actual practice and corrective action taken, if any.

- c. Pursuant to 35 IAC 218.411(d)(3), the Permittee shall notify the Illinois EPA in writing of any violation of 35 IAC 218.407 with respect to cleaning solution within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation.
 - d. Pursuant to 35 IAC 218.411(d)(4) if changing its method of demonstrating compliance with the requirements of 35 IAC 218.407(a)(4), or changing between automatic and manual methods of preparing cleaning solutions, the Permittee shall certify compliance for such new method in accordance with 35 IAC 218.411(d)(1), within 30 days after making such change, and perform all tests and calculations necessary to demonstrate that such printing line(s) will be in compliance with the applicable requirements of this permit including 35 IAC 218.407(a)(4).
- 12a. The records kept pursuant to Conditions 10(c), 11(b), and 12(b) for the afterburner system, fountain solution and cleaning solution shall also be sufficient to address compliance with applicable requirements of Condition 2 for offset printing.
- b. The notifications required pursuant to Condition 10(d), 11(c), and 12(c) for violations of applicable requirements of 35 IAC 218.407(a) for offset printing shall also be made for violation of applicable requirements of Condition 2 for offset printing.
13. The Permittee shall keep appropriate records to demonstrate compliance with requirements of Condition 2(d) for ink jet printing cabinets.
14. The Permittee shall keep the following records to demonstrate compliance with the operating and emission limitations in Condition 4:
- a. Inks, fountain solution, automatic wash and manual wash usage (ton/mo and ton/yr) including VOM content of each material used.
 - b. VOM emissions (ton/mo and ton/yr).
 - c. Ink jet material usage (ton/mo and ton/yr), VOM content including VOM emissions (ton/mo and ton/yr) from ink jet printing cabinets.
 - d. Natural gas combustion (CF/mo and CF/yr).
 - e. VOM, NO_x, CO, SO₂, PM emissions from natural gas combustion.
15. All records required by this permit shall be maintained for three years at the source and be made available to the Illinois EPA for inspection or copying upon request. Computerized records shall be printed upon request.

- 16a. Any record showing a violation of the conditions of this permit, if not otherwise specified, shall be reported by sending a copy of such record to the Illinois EPA Compliance Section within 30 days following the occurrence of the violation.
- b. With the Annual Emission Report required by 35 IAC Part 254, the Permittee shall also report the following information:
- i. Status of project development.
 - ii. Changes (addition or removal) of ink jet printing cabinets.
17. Two copies of required reports and notifications concerning equipment operation or repairs, emission testing or monitoring shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

- 18a. i. Compliance with the VOM emission limitations in Condition 4 for offset presses shall be determined as follows:

Ink and Coating VOM Emissions (pounds) (E_I):

$$E_I = (U_I) (VC_I/100) (1-R_I/100) [1-(CE_I/100) (DE/100)]$$

Fountain Solution VOM Emissions (pounds) (E_{FS}):

$$E_{FS} = (U_{FS}) (VC_{FS}/100) [1-(CE_{FS}/100) (DE/100)]$$

Automatic Cleaning Solution VOM Emissions (pounds) (E_{ABW}):

$$E_{ABW} = (U_{ABW}) (VC_{ABW}/100) [1-(CE_{ABW}/100) (DE/100)]$$

Manual Cleaning Solution VOM Emissions (pounds) (E_{MBW}):

$$E_{MBW} = (U_{MBW}) (VC_{MBW}/100) (1-R_{MBW}/100)$$

Total VOM Emissions (tons) (E_T):

$$E_T = (E_I + E_{FS} + E_{ABW} + E_{MBW}) / (2000)$$

Where:

E_I = Ink and coating VOM emissions (lb)

U_I = Amount of each ink and coating used (lb)

VC_I = VOM content of each ink and coating used (percent by weight)

R_I = 20 percent by weight VOM retention in the web for offset inks and coatings, based on USEPA's *Alternative Control Techniques Document for Offset Lithographic Printing*, November 8, 1993

CE_I = 100 percent VOM capture efficiency with the afterburner system, provided each press dryer is operated in accordance with Condition 2(a)(ii)

DE = VOM destruction efficiency provided by the afterburner system (See Condition 18(a)(ii))

E_{FS} = Fountain solution VOM emissions (lb)

U_{FS} = Amount of each fountain solution used (lb)

VC_{FS} = VOM content of each fountain solution used (percent by weight)

CE_{FS} = 70 percent VOM capture efficiency with the afterburner system, provided each press dryer is operated in accordance with Condition 2(a)(ii), based on USEPA's *Alternative Control Techniques Document for Offset Lithographic Printing*, June, 1994

E_{ABW} = Automatic cleaning solution VOM emissions (lb)

U_{ABW} = Amount of each automatic cleaning solution used (lb)

VC_{ABW} = VOM content of each automatic cleaning solution used (percent by weight)

CE_{ABW} = 40 percent VOM capture efficiency with the afterburner system, provided each press dryer is operated in accordance with Condition 2(a)(ii), based on USEPA's *Alternative Control Techniques Document for Offset Lithographic Printing*, June, 1994

E_{MBW} = Manual cleaning solution VOM emissions (lb)

U_{MBW} = Amount of each manual cleaning solution used (lb)

VC_{MBW} = VOM content of each manual cleaning solution used (percent by weight)

R_{MBW} = 50 percent VOM retention in cleaning material, based on
USEPA's *Alternative Control Techniques Document for Offset
Lithographic Printing*, June, 1994

- ii. If the afterburner system operates in compliance with Condition 7, the destruction efficiency of the afterburner system (DE) shall be the average destruction efficiency (percent by weight) demonstrated by the most recent emissions test for the system showing compliance with Condition 2(a)(ii) or 99.5 percent, whichever is lower. If the afterburner system is not so operated, the destruction efficiency shall be reduced from the tested value to account for the failure to operate in compliance with Condition 7, and the Permittee shall keep detailed records explaining this adjustment. Prior to performance of emission testing, the destruction efficiency of the afterburner system demonstrated by test shall be assumed to be 98 percent.
- 19a. The Permittee shall maintain 75.34 tons of VOM emission reduction credit from other sources in the Chicago nonattainment area such that the total is 1.3 times the VOM emissions allowed from this project pursuant to Condition 4(a).
- b. These VOM emission reduction credits are provided by permanent emission reductions that occurred at the following sources, as listed below. These emission reductions have been relied upon by the Illinois EPA to issue this permit and cannot be used for other purposes.

Burrell-Leder Beltech, Skokie, I.D. #031288AGR	
Process Change	-22.9 tons/year
Handy Button, Melrose Park, I.D. #031186AFR	
Process Change	-32.0 tons/year
Hargro, Chicago, I.D. #031600CPO	
Shutdown of Printing	<u>-20.5 tons/year</u>
Total	75.4 tons/year

Condition 19 represents the actions identified in conjunction with this project to ensure that the project does not interfere with reasonable further progress.

20. This project may be constructed in sequential fashion, as follows:
- a. The project shall consist of two phases, with the first phase consisting of construction of at least four offset presses in the current building and the second phase consisting of construction of the remaining offset presses with expansion of the building.
 - b. The second phase of construction shall commence by January 1, 2003.
 - c. i. Construction of each phase shall occur without an interruption greater than 18 months between the completion of one offset press and the start of the next one.

- ii. For this purpose, a binding purchase order for architectural services or the purchase of an offset press shall be considered construction.
- 21. This approval to construct and operate does not relieve the Permittee of the responsibility to comply with all local, state and federal regulations that are part of the applicable Illinois State Implementation Plan, as well as all other applicable federal, state and local requirements.
- 22a. Within twelve months from the date of construction of the first offset press being complete the Permittee shall submit the CAAPP application to the Illinois EPA pursuant to Section 39.5 (5) (k) of the Environmental Protection Act.
- b. Notwithstanding the expiration date specified on the first page of this permit, upon issuance of the CAAPP permit for this source, the authorization to operate emission units pursuant to this permit shall cease as authorization to operate emission units is provided by the issued CAAPP permit.

Please note that this permit has been revised to make changes to operating and emission limitations as discussed in Finding 3.

If you have any questions on this permit, please call Christopher Romaine at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:CPR:psj

cc: Region 1